

APR 17 1916

NOVAL

STREET LIGHTING UNITS

FOR

MAZDA SERIES LAMPS



GENERAL ELECTRIC COMPANY
SCHENECTADY NEW YORK



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Data in this book subject to change without notice

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Y-785 Mar. 15, 1916 *Supersedes Y-681*
Classes 22-26

NOVALUX STREET LIGHTING UNITS FOR MAZDA SERIES LAMPS

GENERAL DESCRIPTION

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SERIES INCANDESCENT FIXTURES

NEW SIZES OF MAZDA LAMPS FOR STREET LIGHTING

Among the most recent developments in the science of series street lighting is the development of the new high candle-power sizes of series lamps. These lamps have efficiencies which were never before thought possible and make high candle-power incandescent lamp units practical.

The filament is a closely wound coil of drawn Tungsten wire of great strength, but instead of operating in a vacuum it operates in an atmosphere of gas. This enables the filament to be run at very high temperatures without decreasing the life.

Due to the high temperature of the bulb it is desirable to operate all lamps rated 400 c-p. or over in ventilated fixtures equipped with globes to protect the lamp bulb from the effects of moisture and atmospheric changes.

Furthermore, the extreme concentration of the filament produces high intrinsic brilliancy and consequent glare unless globes of diffusing glass are used to conceal the light source and improve the distribution. Even on the smaller sizes where a globe is not required for protection some such device is recommended for diffusing the light and removing the filament from the line of vision.

These changes in the shape and size of the bulb, the desirability for proper ventilation and protection have made advisable the design of an entire new line of fixtures for lamps of 400 c-p. or over and new fittings to better adapt the lower candle-power lamps to our present line of street system fixtures.

These fixtures embody characteristics for the successful operation of MAZDA lamps, and are made in three different styles; the pendent units for the high candle-power lamps, the ornamental units for high candle-power lamps, and the bracket type for the low candle-power lamps.

DATA ON MAZDA C STREET SERIES LAMPS

Amps.	Candle-Power	Average Volts	Type and Size of Bulb	Diam. Bulb in In.	Max. Overall Length in In.	* Base Regularly Supplied
5.5	60	8.5	S-24 $\frac{1}{2}$	3 $\frac{1}{16}$	7 $\frac{1}{4}$	Mog. screw
	80	10.8	S-24 $\frac{1}{2}$	3 $\frac{1}{16}$	7 $\frac{1}{4}$	Mog. screw
	100	13.0	PS-35	4 $\frac{3}{8}$	9 $\frac{3}{4}$	Mog. screw
	250	29.7	PS-40	5	10	Mog. screw
	400	47.4	PS-40	5	10	Mog. screw
6.6	60	7.1	S-24 $\frac{1}{2}$	3 $\frac{1}{16}$	7 $\frac{1}{4}$	Mog. screw
	80	9.1	S-24 $\frac{1}{2}$	3 $\frac{1}{16}$	7 $\frac{1}{4}$	Mog. screw
	100	10.9	PS-35	4 $\frac{3}{8}$	9 $\frac{3}{4}$	Mog. screw
	250	23.5	PS-40	5	10	Mog. screw
	400	37.1	PS-40	5	10	Mog. screw
7.5	60	6.4	S-24 $\frac{1}{2}$	3 $\frac{1}{16}$	7 $\frac{1}{4}$	Mog. screw
	80	8.0	S-24 $\frac{1}{2}$	3 $\frac{1}{16}$	7 $\frac{1}{4}$	Mog. screw
	100	9.6	PS-35	4 $\frac{3}{8}$	9 $\frac{3}{4}$	Mog. screw
	250	19.6	PS-40	5	10	Mog. screw
	400	30.5	PS-40	5	10	Mog. screw
15.0	600	45.8	PS-40	5	10	Mog. screw
	400	13.2	PS-40	5	12 $\frac{1}{2}$	Mog. sc. sk.
20.0	600	14.1	PS-40	5	12 $\frac{1}{2}$	Mog. sc. sk.
	1000	22.3	PS-40	5	12 $\frac{1}{2}$	Mog. sc. sk.

* Medium Screw Skirted Base (Style 100) can also be supplied except 400, 600 and 1000 c-p. lamps, which are supplied only with Mogul Screw Skirted or Unskirted Base (Style 400) as indicated.

These lamps are not recommended frosted. If frosted lamps are required, bowl frosted lamps are to be preferred.

Orders for lamps of 250 c-p. and higher should specify if they are to be burned in other than a pendent position.

STREET LIGHTING

At the present time more attention is being paid to street lighting and its problems than ever before. Municipalities are beginning to realize that good street lighting means a better, cleaner city, enhanced property values, and civic progress. It is good business to have well lighted streets—good business for the merchants and property owners—good business for the city as a whole.

This growth of interest has been paralleled by activity on the part of the manufacturers, and wonderful advances have been made in both the development and application of street lighting units. The insistent demand for a high efficiency unit for outdoor lighting made the new sizes of MAZDA lamps of immediate and particular value. The field for such a unit is tremendous; thousands of gas fixtures and enclosed carbon arc lamps were immediately replaced by high powered MAZDA lamps.

Aside from increasing the general efficiency of the MAZDA lamp, the new sizes of series lamps solved the street lighting problem for the thousands of smaller Central Stations which have been using carbon enclosed arc lamps. In most cases these arc lamps have been in service for 10 years or more and, although they were the best lighting unit available at the time of their installation, they have been hopelessly outclassed by more efficient and more economical arc lamps. In some of these installations, in comparatively small towns and cities, the initial cost of the new station and line equipment necessary to operate luminous arc lamps has delayed a change. In many cases, the people favored large units rather than a large number of small units, and refused to consider bracket and center span fixtures. As a result, there are several hundred thousand series enclosed carbon arc lamps operating in the country today which can now be replaced by more efficient and economical units at a very low initial expense.

The new 400, 600 and 1000 c-p. MAZDA lamps have replaced a large number of the obsolete types of alternating current series enclosed arc lamps because a 600 c-p. MAZDA lamp properly equipped, gives about twice as much light as the 7.5 amp. carbon enclosed arc lamp, and consumes 40 per cent less energy. Furthermore, the station capacity is increased by 40 per cent and a reserve capacity secured for possible extensions. No changes are necessary in the lines or cable and the same hangers and cutouts can be used—simply a substitution of lamp for lamp.

These really wonderful results, however, can only be applied to the best advantage by a careful study of each situation. Street lighting requirements vary with local conditions. What proves exactly right for one locality may not apply to the next. Therefore, to work to the highest efficiency and to secure the

STREET LIGHTING (Cont'd)

best results, it is always necessary to know the specific requirements of each individual case. Then, from the wide range of candle-power sizes of MAZDA lamps and the almost infinite number of combinations of Novalux pendent and ornamental units, bracket and center span suspension fixtures, it will be possible to choose a unit which will give the maximum results efficiently, economically and æsthetically.

NOVALUX PENDENT UNITS

EFFICIENCY

The new sizes of MAZDA series lamps, 400, 600 and 1000 c-p. are much more efficient when operated at 15 and 20 amp. than at any lower current value. Since most series alternator constant current circuits are either 6.6 or 7.5 amperes, it is necessary to have an individual auto-transformer for each lamp to be connected directly to the low current series circuit to supply 15 amperes for the 400 c-p. lamp and 20 amp. for the 600 and 1000 c-p. lamps. Such a device is mounted directly under the hood of the Novalux unit and operates at an efficiency of 94 to 95 per cent with a power-factor of 95 per cent.

Although the 400 and 600 c-p. lamps can be obtained at lower currents for operation directly on 5.5, 6.6 or 7.5 amp. circuits, a careful comparison shows that for the majority of installations the high current series MAZDA lamps with individual auto-transformers are more efficient and economical to operate than low current 6.6 amp. lamps of equal candle-power rating; furthermore, that the increased efficiency means increased capacity in constant current transformers and other station equipment. There is still another advantage in favor of the auto-transformer type of lamp, which is rather difficult to capitalize but which is of sufficient importance to deserve careful consideration, that is, the possibility of lamp mortality due to current variations or surges.

Regardless of the fact that the constant current transformer regulates within 0.2 of an ampere from full load to no load, it is almost impossible to prevent momentary surges which may be of sufficient magnitude and duration to affect the life of the lamps. It is impossible to state positively the percentage rise in current during such a surge since it may be due to excessive variations in primary current or to grounds, arc or permanent, at some point in the circuit. The duration of the surge will depend upon the nature of its cause and the time necessary for the constant current transformer to adjust itself to the changed conditions and restore normal current.

NOVALUX PENDENT UNITS (Cont'd)

In our series auto-transformer the windings are no superimposed and due to the magnetizing effect of the current flowing in the secondary coil, breaking the magnetizing effect of the current in the primary coil, a large difference of flux

potential is apparent at the portion of the iron core between the primary and secondary windings. When there is an increase of current in the secondary coil, breaking the magnetizing effect of the current in the primary coil, a large difference of flux potential is apparent at the portion of the iron core between the primary and secondary windings. When there is an increase of current in both windings this flux potential increases to a sufficient value that there is a leakage from the top to the bottom of the iron core, depending upon the reluctance of the air path between these points. This leakage flux is a part of the main flux caused by the current in the primary winding and it can easily be seen that as this leakage is dependent upon the difference in flux potential, and the difference in flux potential upon the current in each

coil, that the secondary coil will, after a sufficient increase, be receiving only a small portion of the flux from the primary and, therefore, the potential of primary has



Fig. 1

RECTANGULAR AUTO-TRANSFORMER
WITH SOCKET SUPPORT FOR 300
WATT, TYPE C, MAZDA LAMP
FOR NOVALUX UNIT

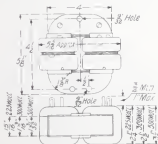


Fig. 2

OUTLINE FOR COMPENSATOR—NOVALUX FIXTURE

NOVALUX PENDENT UNITS (Cont'd)

remained constant. If, however, we are keeping the current constant in the primary winding, then as we have seen, the current in the secondary will vary with a variation of secondary lamp resistance. If we keep our secondary or lamp resistance constant and increase our primary current the flux potential between these points is increased and leakage occurs, causing less of the total primary flux to pass through the iron under the secondary coil. This has the effect of inducing less voltage in the secondary coil and it consequently delivers in proportion less current to the lamp.

The auto-transformer for the 600 c-p. lamp is equipped with a tap for a 400 c-p. lamp. The auto-transformer for the 400 c-p. lamp has a tap for a 600 c-p. lamp. This feature establishes the flexibility of the auto-transformer type of unit and provides for the demand for more light which must come in the future.

The standard auto-transformers are designed for operation at 6.6 and 7.5 amperes. At a slightly additional expense we can wind auto-transformers to operate at any primary current from 3 to 10 amperes. The 400 c-p. lamp operates at 15 amperes but the 600 and 1000 c-p. lamps operate at 20 amperes. For special frequencies, 25, 40, 125 or 133 cycles, special auto-transformers should be provided.

As a general proposition, the light from a MAZDA lamp does not vary proportionately with the current, but in the ratio of 6 to 1. Furthermore, the lamp under proper conditions should average 1350 hours' life and will not greatly exceed this amount with an accompanying depreciation in candle-power. It is estimated that with the MAZDA lamp the candle-power will not decrease below 80 per cent during the life of the lamp. It is necessary, therefore, in order to secure the rated candle-power and life, always to operate the lamps with the proper auto-transformers.

LIGHT DISTRIBUTION

There is no single type of light distribution which can be applied as a standard to meet every requirement of general street lighting. A city is generally divided into several distinct sections and each should be treated differently. The business section, the main thoroughfares, the residential section, the suburbs and outlying districts and the parkways and boulevards, each present a separate problem. It is possible to lay down very general rules for properly lighting these sections but even then the physical conditions change for each city and these rules cannot be too specific.

It is true that the lack of funds is perhaps the most serious obstacle in the path of improvements in street lighting but

LIGHT DISTRIBUTION (Cont'd)

equally true that with the present increased efficiencies of illuminants and a proper selection from the new scientifically designed reflecting and refracting accessories, it is possible in nearly every case to realize more than double the present street lighting effect without any increase in operating cost.

The selection of the proper diffusing, reflecting and refracting devices is of the utmost importance in its effect upon the light distribution. In the first place, the intense brilliancy of the MAZDA filament produces glare unless obscured by a diffusing medium. The nature of this medium depends upon the type of distribution required.

For business sections, where it is fully as important to light the buildings as well as the streets, the units are usually spaced closely and the light intensities are comparatively greater. In such cases, the diffusing globe alone should be used. An external reflector is undesirable because the upward light is required for properly illuminating the building fronts and on account of the closer spacing, it is not necessary to project the downward light to very great distances.

For main thoroughfares and residential sections, upward light is not desirable, intensities are lower and the units are spaced farther apart. For such installations, a reflector is a distinct advantage when used in connection with a diffusing globe. In most cases, however, the spacing is so great that a reflector will not suffice. Not only is there considerable absorption in both the diffusing globe and reflector but too large a percentage of the light is reflected in the area immediately under the lamp and not enough is projected to the areas midway between lamps. It would be possible to make a reflector which would give this distribution but it is absolutely impracticable because such a reflector would have to be 10 or 12 feet in diameter. Here the principle of refraction offers a perfect solution and within the past year street illumination has been revolutionized by the Hoophane prismatic refractors now available in two types, bowl and band.

HOLOPHANE PRISMATIC REFRACTORS

These prismatic refractors are made of transparent glass with prismatic refracting surfaces designed on the lens principle. They consist of two clear glass bowls or bands, one of which fits snugly inside of the other. The joints are sealed to make an air-tight union. The inner part is girdled on its outer surface by horizontal prisms which refract the light from the source at an angle of 10 degrees below the horizontal. The outer part has vertical diffusing prisms on its inner surface for the purpose of spreading the light rays transversely and making the refractor

HOLOPHANE PRISMATIC REFRACTORS

luminous over its entire surface. The two prismatic surfaces come close together when the parts are sealed and the inside and outer surfaces of the complete refractor are entirely smooth.

These refractors more than double the initial candle-power of the MAZDA lamp at an angle of 10 degrees below the horizontal and even with extreme spacing, the height of the lamp can be so adjusted that the maximum amount of light will be projected to the point midway between the lamps.

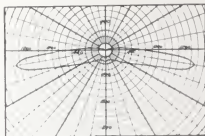


Fig. 3

600 C-P. MAZDA LAMP IN ORIGINAL BOWL.

It will be noted, however, from this distribution curve, with the original bowl type refractor there is very low intensity directly under the unit, in fact, the intensity at this point is actually less than it would be with the bare lamp because the bowl refractor reflected a large percentage of the downward light. This tends toward uniformity but since the lamp is placed directly at street intersections, it does not provide enough light to make traffic safe. To provide for just this condition we have developed the improved refractors known as the *new bowl* and *bowl* type.

THE NEW BOWL REFRACTOR

This type is exactly the same as the original Holophane type except that the refractor is dimensioned and external appearance. The difference is simple in the method of light distribution. Instead of reflecting the downward light and creating a comparatively dark spot in the immediate vicinity of the unit, we have slanted the refracting prisms at the lower part of the bowl and substituted a ripple glass. The outside shape is exactly the same as before. The result of this change is a

THE NEW BOWL REFRACTOR (Cont'd)

shown in Fig. 4. The maximum light is still projected to the point midway between lamps but there is now sufficient light

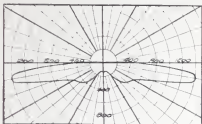


Fig. 4

600 C-P. MAZDA LAMP IN NEW BOWL REFRACTOR

under and near the unit to provide safe and satisfactory illumination for street intersections.

THE NEW BAND REFRACTOR

The construction of this type of refractor is similar to the bowl except that it is a cylindrical refracting ring or band. Both shells are cut off just below the middle of the bowl.

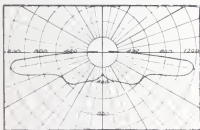


Fig. 5

1400 C-P. MAZDA LAMP IN NEW BAND REFRACTOR

The distribution of light is very much the same as for the new bowl type except that there is no diffusion of downward light and therefore no losses by absorption.

When lighted, the new band refractor presents a highly pleasing appearance and combines a widely spread light distribution with excellent illumination beneath the lamp.

THE NEW BAND REFRACTOR (Cont'd)

Perfect ventilation of the lamp is assured because the top part of the refractor is entirely open. For the same reason accumulation of bugs and dirt is impossible. This insures uninterrupted freedom of downward lighting.

Cleaning may be readily accomplished because the refractor is hinged and may be lowered without difficulty. With like hand room the lamp and socket may be removed as a unit.

The entire refracting unit is so small that it offers no conspicuous mark for malicious damage.

Finally, the new bowl and band refractors meet all illuminating engineering conditions and permit a relatively wide spacing between lamps with sufficient spot lighting to meet the requirements of the two types of reflecting road surfaces; that is, specular reflection from asphalt and oil-treated streets and diffuse reflection from dirt or macadam roads. The importance of meeting the requirements of modern road surfaces as outlined above become recognized more and more by illuminating engineers since it means the attainment of proper silhouette which is foremost in securing a proper degree of visual acuity.

SUMMARY

Novalux units are made for pendent and for ornamental lighting. They are so designed that the auto-transformer may be mounted inside the casing and the highest degree of efficiency attained. They can be adapted for every condition of street lighting; each unit can be equipped with a diffusing globe, a diffusing globe and reflector or with reflector and Holophane prismatic refractor, either bowl or band type.

The Illuminating Engineering Laboratory at Schenectady has tested each type of unit and has located the filament of a MAZDA lamp in exactly correct relation to the diffusing globe, reflector or refractor.

The Engineering Departments of the Edison and National Lamp Divisions have inspected carefully and approved these units from the standpoint of ventilation.

STREET LIGHTING DATA (HAR)

ORIGINAL BOWL VERSUS NEW BANG REFRACTOR



Comparison of light distribution curves for original bowl and new bang refractor. (See also page 16.)

Notes: 1. Original bowl fixture (1000000) with 1000000
 2. Original bowl fixture (1000000) with 1000000
 3. Original bowl fixture (1000000) with 1000000
 4. Original bowl fixture (1000000) with 1000000
 5. Original bowl fixture (1000000) with 1000000
 6. Original bowl fixture (1000000) with 1000000
 7. Original bowl fixture (1000000) with 1000000
 8. Original bowl fixture (1000000) with 1000000
 9. Original bowl fixture (1000000) with 1000000
 10. Original bowl fixture (1000000) with 1000000

STREET LIGHTING DATA CHART

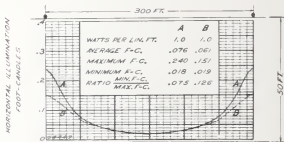
NEW BOWL VERSUS ORIGINAL BOWL TYPE REFRACTOR



A



B



VALUES OF ILLUMINATION CALCULATED FOR STREET SURFACE
ALONG CENTER OF STREET

- A—Form 6, Novalux Pendent Unit equipped with Holographic prismatic glass refractor (new bowl type), 20 in. steel reflector and 600 c-p., 20 amp. MAZDA series lamp.
- B—Form 6, Novalux Pendent Unit equipped with Holographic prismatic refractor No. 170557 (original bowl type), 20 in. steel reflector and 600 c-p., 20 amp. MAZDA series lamp. Height of units 25 ft. above street surface, lamps 4 ft. above curb line.

FORM 6

NOVALUX PENDENT UNITS

FORM 6 NOVALUX UNITS

The Form 6 units embody the very latest ideas in design, both of an artistic and mechanical nature.

They are made for use with the 5.5, 6.6 or 7.5 amp. standard series MAZDA lamps and for use with the 400 c-p., 1500, 600 and 1000 c-p., 20 amp. MAZDA series lamps. The units for operating the high candle-power lamps are equipped with self-contained auto-transformers so that they can be operated on standard constant current circuits of either 6.6 or 7.5 amperes.

The Form 6 units are made in two different general types, one being for mounting on brackets or permanent fastenings to mast arms, while the other is for the regular method of suspension. These two types are termed the Bracket and Pendent types, respectively.

The bracket type is equipped with the same insulator which is used with our series incandescent brackets. This insulator provides an insulation between the unit and the pole which will withstand voltage strains up to 25,000 volts. This insulator has the same mechanical, as well as electrical strength because it is composed of only one massive porcelain. In addition to this important "Safety First" feature, it is adapted for either open or concealed wiring of the unit.

For open wiring the units are furnished with flexible leads equipped with substantial soldered connectors of liberal cross-section. Should it be desired, however, the circuit wires can be brought directly into the fixture by simply bringing the wires to the tying ears on the insulator and then through the ports to the interior binding posts.

For concealed wiring the leads can be brought through the bracket pipe, through the hood into the top of the insulator and then into the binding posts. The binding posts in the insulator are heavy alloy castings, each one being equipped with two phosphor-bronze screws to prevent the possibility of loose connections, open circuits, or grounds.

POSSIBLE GLASSWARE COMBINATIONS

The following three combinations of light distributing equipment can be used with both the Pendent or the Bracket types:

1. No. 87 Light Carrara Outer Globe.
2. No. 87 Light Carrara Outer Globe and 20 In. Reflector.
3. New Prismatic Bowl Refractor or Prismatic Refractor and 20 In. Reflector.

POSSIBLE GLASSWARE COMBINATIONS (Cont'd)

The illuminating characteristics are practically the same as are obtained with the Form 1 Novalux Units.

The handsome appearance of the Form 6 unit is worthy of more than passing notice. Substantial, simple, but with harmonious lines, these fixtures will improve the appearance of any street where they are installed.

CONSTRUCTION

One of the important novel features of the Form 6 unit is the method of ventilation. The globe seat is made air-tight. The air enters through the fine mesh-protected openings under the lower flange of the casing near the globe, circulates around the socket, and leaves through fine-mesh protected openings under the dome of the lamp. This method gives a liberal supply of cooling air but absolutely prevents the entrance of insects.

The globe holder is hinged to permit ready access to the lamp, and the globe holding device holds the globe firmly and evenly against the globe seat, but is so constructed that it is independent of the retaining screw thus preventing globe breakage from excessive tightening of the screw.

The casing is made of spun copper, has a black oxidized finish and is held to the dome by a bayonet joint and set screws.

The reflector is made of steel with black enameled top and white fire enameled reflecting surface.

The new bowl or band refractors are used.

The socket is of the skeleton type, the same as that which is used in the other Novalux fixtures.

FORM 6 NOVALUX PENDENT UNITS

For 250 c-p. MAZDA Series Lamps

*Cat. No. (Unit Complete)	Fig.	Lamp Rating in Amp.	Equipped with	Approx. Ship. Wt.
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1 PENDENT TYPE

(Without Auto-Transformers)

(00000)	6	13.66 or 7	No. 87 light carrara globe	55
(00040)	7		No. 87 light carrara globe and Cat. No. 170050 reflect. fixture	60
(00080)	8		Cat. No. 170057 Hologhane type light globe reflector and Cat. No. 170050 reflect. fixture	65

* Catalog No. 170050 is not suitable MAZDA lamp.

† These units can be equipped with multiple socket for operating multiple lamps.

‡ Hologhane, patented reflector, new lamp type can be furnished for these lamp types.

FORM 6 NOVALUX PENDENT UNITS

For 400 c-p. MAZDA Series Lamps

Unit (Complete)	Fig.	Lamp Rating in Amp.	Equipment with	Approx. Wt.
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PENDENT TYPE

(Complete with Auto-Transformer for 4.4 Amp., 60 Cycle Series Circuit)

70007	6	15	One 87 light in incandescent	65
170008	7	15	One 87 light in incandescent and Cat. No. 170008 reflector	75
170011	8	2.5	One 75 170011 fluorescent lamp with special reflector and Cat. No. 170008 reflector	65

† PENDENT TYPE

(Complete with Auto-Transformer for 7.4 Amp., 60 Cycle Series Circuit)

170009	6	15	One 87 light in incandescent	65
170010	7	15	One 87 light in incandescent and Cat. No. 170008 reflector	75
170011		15	One 75 170011 fluorescent lamp with special reflector and Cat. No. 170008 reflector	65

‡ PENDENT TYPE

(Without Auto-Transformers)

70007	6	4.4 & 6 1.1	One 87 light in incandescent	65
170011	7		One 87 light in incandescent and Cat. No. 170008 reflector	75
170012	8		One 75 170012 fluorescent lamp with special reflector and Cat. No. 170008 reflector	65

* Catalog Numbers for incandescent MAZDA lamps.

† Special auto-transformer can be furnished for any alternating current
rises for unit from 3 to 18 amperes, 25 or 60 cycles.‡ These units can be equipped with multiple socket for operating straight
multiple lamps.§ Fluorescent pendant reflector now being type can be furnished instead
of the low bowl type.

FORM 6 NOVALUX PENDENT UNITS For 600 c-p. MAZDA Series Lamps

Complete Type Code	Fig.	Lamp Rating in Amp.	Equipped with	Approx. Size in W.
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PENDENT TYPE (WITH TAP FOR 400 C-P)

Complete with Auto-Transformer for 4.4 Amp, 60 Cycle Series Circuits

100004	4	2	No. 87 light fixture globe	40
100005	7	2	No. 87 light fixture globe and No. 100005 reflector	20
100006	7	2	No. 87 light fixture globe and No. 100006 reflector	60

PENDENT TYPE (WITH TAP FOR 400 C-P)

Complete with Auto-Transformer for 2.8 Amp, 60 Cycle Series Circuits

100007	8	2	No. 87 light fixture globe	40
100008	7	2	No. 87 light fixture globe and No. 100008 reflector	20
100009	7	2	No. 87 light fixture globe and No. 100009 reflector	60

PENDENT TYPE Without Auto-Transformers

100010	8	4.4 Amp 60 C-P	No. 87 light fixture globe	40
100011	7		No. 87 light fixture globe and No. 100011 reflector	20
100012	7		No. 87 light fixture globe and No. 100012 reflector	60

* Catalog No. 100000 is the standard MAZDA lamp.
† Complete with transformer for 4.4 Amp, 60 Cycle Series Circuits.
‡ These units can be equipped with multiple sockets for operating 4 or more lamps.
§ The standard globe is made of glass. Other types can be furnished for special applications.

FORM 6 NOVALUX PENDENT UNITS

For 1000 c-p. MAZDA Series Lamps

Cat. No. (Unit Com- plete)	Fig.	Lamp Rating in Amp.	Equipped with	Approx. Ship. Wt.
PENDENT TYPE (WITH TAP FOR 600 C-P) (Complete with Auto-Transformer for 6.6 Amp., 60 Cycle Series Circuit)				
170550	6	20	No. 87 light Barrara globe . .	65
170551	7	20	No. 87 light Barrara globe and Cat. No. 170556 reflector . .	70
170552	8	20	Cat. No. 170557 Holophane prismatic bowl refractor and Cat. No. 170556 reflector. . .	65

PENDENT TYPE (WITH TAP FOR 600 C-P) (Complete with Auto-Transformer for 7.5 Amp., 60 Cycle Series Circuit)				
171868	6	20	No. 87 light Barrara globe . .	65
171869	7	20	No. 87 light Barrara globe and Cat. No. 170556 reflector . .	70
171870	8	20	Cat. No. 170557 Holophane prismatic bowl refractor and Cat. No. 170556 reflector . .	65

* Catalog Numbers do not include MAZDA lamps.

† Special auto-transformers can be furnished for any alternating current series circuit from 3 to 10 amperes, 25 to 133 cycles.

‡ Holophane prismatic refractor (new band type) can be furnished instead of the new bowl type.

FORM 6 NOVALUX BRACKET UNITS

For 250 c-p. MAZDA Series Lamps

*Cat. No. (Unit Complete)	Fig.	Lamp Rating in Amp.	Equipped with	Approx. Ship. Wt.
† BRACKET TYPE (Without Auto-Transformers)				
170523	9	5, 5.6, 6 or 7.5	No. 87 light carrara globe	75
170524	10		No. 87 light carrara globe and Cat. No. 170556 reflector	80
170525	11		Cat. No. 170557 Holophane pris- matic bowl refractor and Cat. No. 170556 reflector	75

* Catalog Numbers do not include MAZDA lamps.

Catalog Numbers include high-voltage insulator, and cast iron bracket attaching to 1½ in. pipe. Special hoods can be supplied for 1, 1½ or 2 in. pipe.

† These units can be equipped for multiple service by omitting the insulator and using a multiple socket.

‡ Holophane prismatic refractor (new band type) can be furnished in place of the new bowl type.

FORM 6 NOVALUX BRACKET UNITS

For 400 c-p. MAZDA Series Lamps

*Cat.No. (Unit Com- plete)	Fig.	Lamp Rating in Amp.	Equipped with	Apprx. Ship. Wt.
-------------------------------------	------	---------------------------	---------------	------------------------

BRACKET TYPE

(Complete with Auto-Transformer for 5.5 Amp., 60 Cycle Series Circuit)

170535	9	15	No. 87 light carrara globe . . .	85
170536	10	15	No. 87 light carrara globe and Cat. No. 170556 reflector	90
† 170537	11	15	Cat. No. 170557 Holophane pris- matic bowl refractor and Cat. No. 170556 reflector	85

‡ BRACKET TYPE

(Complete with Auto-Transformer for 7.5 Amp., 60 Cycle Series Circuit)

170562	9	15	No. 87 light carrara globe . . .	85
170563	10	15	No. 87 light carrara globe and Cat. No. 170556 reflector	90
† 170564	11	15	Cat. No. 170557 Holophane pris- matic bowl refractor and Cat. No. 170556 reflector	85

‡ BRACKET TYPE

(Without Auto-Transformers)

170523	9	5.5, 6.6 or 7.5	No. 87 light carrara globe . . .	75
170524	10		No. 87 light carrara globe and Cat. No. 170556 reflector	80
† 170525	11		Cat. No. 170557 Holophane pris- matic bowl refractor and Cat. No. 170556 reflector	75

* Catalog Numbers do not include MAZDA lamps.

† Catalog Numbers include high-voltage insulator and cast iron hood for attaching to 1½ in. pipe. Special hoods can be supplied for 1, 1½ or 2 in. pipe.

‡ Special auto-transformers can be furnished for any alternating current series circuit from 3 to 10 amperes, 25 to 135 cycles.

§ These units can be equipped for multiple service by omitting the refractor and using a multiple socket.

¶ Holophane prismatic refractor - new bowl type can be furnished instead of the new bowl type.

FORM 6 NOVALUX BRACKET UNITS

For 600 c-p. MAZDA Series Lamps

*Cat. No (Unit Com- plete)	Fig.	Lamp Rating in Amp.	Equipped with	Apprx. Ship. Wt.
-------------------------------------	------	---------------------------	---------------	------------------------

BRACKET TYPE (WITH TAP FOR 400 C-P.)

(Complete with Auto-Transformer for 6.6 Amp., 60 Cycle Series Circuit)

170547	9	20	No. 87 light carrara globe	85
170548	10	20	No. 87 light carrara globe and Cat. No. 170556 reflector	90
† 170549	11	20	Cat. No. 170557 Holophane pris- matic bowl refractor and Cat. No. 170556 reflector	85

† BRACKET TYPE (WITH TAP FOR 400 C-P.)

(Complete with Auto-Transformer for 7.5 Amp., 60 Cycle Series Circuit)

171865	9	20	No. 87 light carrara globe	85
171866	10	20	No. 87 light carrara globe and Cat. No. 170556 reflector	90
† 171867	11	20	Cat. No. 170557 Holophane pris- matic bowl refractor and Cat. No. 170556 reflector	85

BRACKET TYPE

(Without Auto-Transformers)

170523	9	5.5, 6.6 or 7.5	No. 87 light carrara globe	75
170524	10		No. 87 light carrara globe and Cat. No. 170556 reflector	80
† 170525	11		Cat. No. 170557 Holophane pris- matic bowl refractor and Cat. No. 170556 reflector	75

* Catalog Numbers do not include MAZDA lamps.

Catalog Numbers include high-voltage insulator, and cast iron base attaching to 1½ in. pipe. Special hoods can be supplied for 1, 1½ or 2 in.

† Special auto-transformers can be furnished for any alternating current series circuit from 3 to 10 amperes, 25 to 133 cycles.

‡ These units can be equipped for multiple service by omitting the insulator and using a multiple socket.

§ Holophane prismatic refractor (new band type) can be furnished instead of the new bowl type.

FORM 6 NOVALUX BRACKET UNITS

For 1000 c-p. MAZDA Series Lamps

*Cat. No. (Unit Com- plete)	Fig.	Lamp Rating in Amp.	Equipped with	Apprx. Ship. Wt.
--------------------------------------	------	---------------------------	---------------	------------------------

BRACKET TYPE (WITH TAP FOR 600 C-P.)

(Complete with Auto-Transformer for 6.6 Amp., 60 Cycle Series Circuit)

170553	9	20	No. 87 light carrara globe	85
170554	10	20	No. 87 light carrara globe and Cat. No. 170556 reflector	90
170555	11	20	Cat. No. 170557 Holophane pris- matic bowl refractor and Cat. No. 170556 reflector	85

† BRACKET TYPE (WITH TAP FOR 600 C-P.)

(Complete with Auto-Transformer for 7.5 Amp., 60 Cycle Series Circuit)

171871	9	20	No. 87 light carrara globe	85
171872	10	20	No. 87 light carrara globe and Cat. No. 170556 reflector	90
171873	11	20	Cat. No. 170557 Holophane pris- matic bowl refractor and Cat. No. 170556 reflector	85

* Catalog Numbers do not include MAZDA lamps.

Catalog Numbers include high-voltage insulator, and cast iron hood for attaching to 1½ in. pipe. Special hoods can be supplied for 1, 1½ or 2 in. pipe.

† Special auto-transformers can be furnished for any alternating current series circuit from 3 to 10 amperes, 25 to 133 cycles.

‡ Holophane prismatic refractor (new band type) can be furnished instead of the new Bowl type.

FORM 6 NOVALUX UNITS

Accessories



* No. 57 Globe
Dia., $12\frac{1}{4}$ In.; Length, $11\frac{1}{4}$ In.

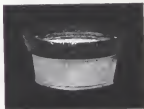


Cat. No. 170557 Prismatic Bowl
Refractor and Holder

Consists of:
Cat. No. 158298 New Holophane
Prismatic Refractor
(Dia., $8\frac{1}{4}$ In.; Length, $7\frac{1}{4}$ In.)
Cat. No. 170558 Holder



Cat. No. 170556 Reflector
Dia., 20 In.; Depth, $1\frac{1}{4}$ In.; Collar
Dia., $11\frac{1}{4}$ In.; Collar Opening, $11\frac{1}{4}$ In.



Cat. No. 176185 Prismatic Band Refractor and Holder
Consists of:

Cat. No. 174274 Holophane Prismatic Band Refractor
(Dia., $8\frac{1}{4}$ In.; Length, $3\frac{1}{4}$ In.)
Cat. No. 170558 Holder

* In ordering globes separate from complete units, specify whether or
light Carrara globes are desired.

FORM 6 NOVALUX PENDENT UNITS

For 250, 400, 600 and 1000 c-p. MAZDA Series Lamps



Fig. 6

PENDENT UNIT MOUNTING WITH NO. 47 LAMP (ARRARA TYPE)



MAZDA ELECTRIC LIGHTING CO. LAMP WITH FORM 6 PENDENT UNIT

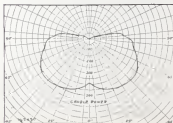
For data see Pages 18 to 25.

FORM 6 NOVALUX PENDENT UNITS (Cont'd)
For 250, 400, 600 and 1000 c-p. MAZDA Series Lamp



Fig. 7

PENDENT UNIT EQUIPPED WITH NO. 87 LIGHT CARRARA GLOBE AND REFLECTOR, CAT. NO. 170556



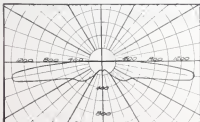
CHARACTERISTIC DISTRIBUTION CURVE WITH 600 C-P. MAZDA LAMP

FORM 6 NOVALUX PENDENT UNITS (Cont'd)
For 250, 400, 600 and 1000 c-p. MAZDA Series Lamps



Fig. 8

PENDENT UNIT EQUIPPED WITH REFLECTOR, CAT. NO. 170556,
AND PRISMATIC REFRACTOR, CAT. NO. 170557



CHARACTERISTIC DISTRIBUTION CURVE WITH 600 C-P. MAZDA LAMP
For data see Pages 18 to 25.

FORM 6 NOVALUX BRACKET UNITS

For 250, 400, 600 and 1000 c-p. MAZDA Series Lamps



Fig. 9

BRACKET TYPE EQUIPPED WITH NO. 87 LIGHT CARRARA GLOBE
(BRACKET NOT INCLUDED IN PRICE OR CAT. NO.)

Distribution curve for this unit is the same as for Fig. 6.

For data see Pages 18 to 25.

FORM 6 NOVALUX BRACKET UNITS (Cont'd)

For 250, 400, 600 and 1000 c-p. MAZDA Series Lamps



Fig. 10

BRACKET TYPE EQUIPPED WITH NO. 87 LIGHT CARRARA GLOBE
AND REFLECTOR, CAT. NO. 170556 (BRACKET NOT
INCLUDED IN PRICE OR CAT. NO.)

Distribution curve for this unit is the same as for Fig. 7.

For data see Pages 18 to 25.

FORM 6 NOVALUX BRACKET UNITS (Cont'd)
For 250, 400, 600 and 1000 c-p. MAZDA Series Lamps



Fig. 11

BRA KET TYPE EQUIPPED WITH PRISMATIC REFRACTOR, CAT. NO. 170556
AND REFLECTOR, CAT. NO. 170556 (BRACKET NOT
INCLUDED IN PRICE OF CAT. NO.)

Distribution curve for this unit is the same as for Fig. 10.

For data see Pages 18 to 25.

FORM 6 NOVALUX UNIT



Fig. 10

View of the lamp fixture showing the flame and the glass globe.



Fig. 11

View of the lamp fixture showing the flame and the glass globe.

FORM 6 NOVALUX PENDENT UNITS **DIMENSIONS**

Used with	Extreme Length in In.	Extreme Diameter in
Auto-Transformer Type		
No. 87 Globe.....	28 ³ / ₈	12 ¹ / ₄
No. 87 Globe and Reflector..	28 ³ / ₈	20
Reflector and Bowl Refractor	28 ³ / ₈	20
Bracket Type		
No. 87 Globe.....	30	12 ¹ / ₄
No. 87 Globe and Reflector	30	20
Reflector and Bowl Refractor	27	20

VENTILATION

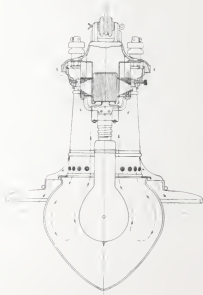


Fig. 14

AIR CIRCULATION OF FORM 6 NOVALUX PENDENT UNIT

FORM 6 NOVALUX UNITS

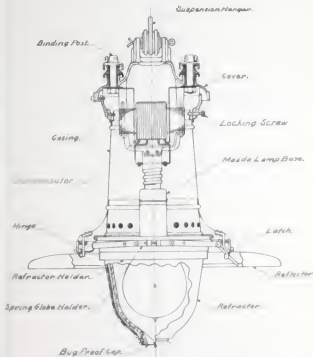


Fig. 18

CROSS-SECTION OF FORM 6 UNIT (PENDENT TYPE) EQUIPPED WITH REFLECTOR AND BOWL REFRACTOR

FORM 6 NOVALUX UNITS

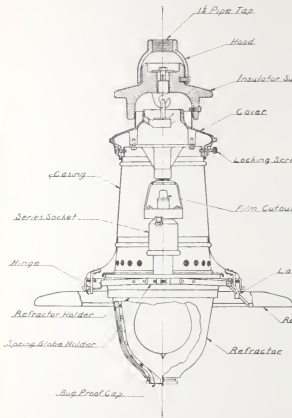


Fig. 16
CROSS-SECTION OF FORM 6 UNIT (BRACKET TYPE) EQUIPPED WITH REFLECTOR AND BOWL REFRACTOR

FORMS 8, 9 AND 4
NOVALUX ORNAMENTAL UNITS

NOVALUX ORNAMENTAL UNITS

GENERAL

A modern White Way or system of business street illumination is called upon to fulfill the two-fold function of furnishing brilliant illumination at night and ornamenting the street in the day-time.

The introduction of the MAZDA C lamps made available an incandescent lamp of such high candle-power that it was possible to combine adequate illumination with the appearance of the single-light unit.

A combination of these two features representing the best ideas in design and construction is expressed in the Novalux ornamental units.

These units are made in three different styles but all have the distinctive appearance that has made the G-E single-light ornamental arc lamp so popular throughout the lighting industry.

The Novalux ornamental units are known as the Forms 8, 9 and 4, the two former styles being the latest addition to the line.

GLOBES

One of the distinguishing features of the Novalux ornamental line is the contour of the diffusing globe. This globe is designed that it is perfectly filled with light and permits the light to be diffused upwards to properly illuminate the building facades. This gives an attractive day-time appearance to the street; a marked contrast to the old method of simply illuminating the streets and sidewalks and allowing the upper story windows to remain in semi-darkness with a resultant tunnel-like aspect to the street.

The Forms 4 and 9 units take the same globe (No. 39) while the globe used with the Form 8 (No. 39) is exactly the same but only smaller in size. The globe is of such density that the light is properly diffused and no glare results from the brilliancy of the filament.

VENTILATION

As the bulb of the high candle-power MAZDA lamp runs very hot at running conditions, it is essential that the globe be properly ventilated and the lamp bulb protected from the effects of moisture and atmospheric changes.

The Novalux ornamental units are so designed that a sufficiently large flow of air is provided to maintain them at the proper operative temperature. The air passes in through the small holes provided in the globe seat and circulates around the lamp bulb and socket, leaving through openings in the aluminum ventilator top which surmounts the globe. The cast iron seat used with these lamps is provided with a felt ring to hold the globe against breakage.

NOVALUX ORNAMENTAL UNITS (Cont'd)

VENTILATION (Cont'd)

Inside of, and at the top of the globe a reflector is placed, the function of which is to direct downward and make useful the rays of light which would otherwise be lost in the bottom of the ventilator.

AUTO-TRANSFORMERS

The auto-transformers used with the Forms 4 and 9 units are the same as those used with the pendent units. A complete description of them is given on Pages 6 to 8.

FORM 8

The Form 8 unit has been designed particularly for the straight series or multiple MAZDA C lamps, and for the high-current series lamps operated from Type IL transformers.

As this unit was not designed to contain an auto-transformer, it has been possible to make it very small and compact. The casing is designed to be set over the top of the pole where it is secured by two screws.

A special porcelain socket has been designed of such size and shape that it rests on two lugs on the inside of the casing and forms the support for the receptacle and the lamp. The construction of this unit has, therefore, been reduced to the simplest possible form consisting as it does of only the casing, socket, receptacle, lamp, globe and top ornament.

The globe seat which is embodied in the casing on the No. 39 globe is similar in construction to those used in the other Novalux orna-



Fig. 17

mental units; the globe being held by three screws. The casing used on the Form 8 unit has a simple, ornate design which will harmonize with practically any style of pole.

As the Form 8 is the smallest of the three different styles of units, the aluminum top ornament has been made smaller to conform. It is also of a somewhat different shape and the ventilating screen is between the bottom of the ventilator and the top of the globe.

NOVALUX ORNAMENTAL UNITS

Form 8



FORM F CASING



NO. 39 DIFFUSING GLOBE



STRAIGHT SERIES TYPE
CROSS SECTION
SHOWING INTERIOR



STRAIGHT MULTIPLE AND IL
SERIES TRANSFORMER TYPE
CROSS SECTION
SHOWING INTERIOR

NOVALUX ORNAMENTAL UNITS (Cont'd)

FORM 9

The Form 9 novalux ornamental units for MAZDA C lamps are made for operating all sizes of the straight series lamps, for high-current series lamps in conjunction with autotransformers, and also high-current series lamps for operation



Fig. 16

in conjunction with autotransformers for multiple operation. Like the Form 8 units they are designed to hang as low as the available and nearest supply of a ceiling, a portable lamp-hanging chain, wire, and by a hole in the ceiling and the chain and cord. When the autotransformer is used it is hung on the underside of the mounting plate. The ventilator when provided is a fine mesh bag upon it mounted on the autotransformer ornament.

NOVALUX ORNAMENTAL UNITS

Form 9



FORM 9 CASING



NO. 37 DIFFUSING GLOBE



STRAIGHT SERIES TYPE
CROSS SECTION
SHOWING INTERIOR



AUTO-TRANSFORMER TYPE
CROSS SECTION
SHOWING INTERIOR

NOVALUX ORNAMENTAL UNITS (Cont'd)

FORM 4

These units have the same exterior appearance as the previous type of Form 4 units, but the internal construction has been very greatly simplified. The heavy insulator previously



Fig. 19

used has been superseded by an internal bell insulator which supports the socket and lamp. In the auto-transformer type this support also carries the auto-transformer.

The same four beautiful casing designs which have become so widely known because of their use on thousands of ornamental luminous lamps and the previous style of Form 4 have been retained for use on these new units. These casings form the capital of the standard or pole. They are made of cast iron, absolutely weatherproof, and are provided with a door which gives ready access to the interior. The casing which supports the lamp and globe is fastened to the top of the pole with three screws. The top ornament is the same as that used on the Form 9 lamp.

NOVALUX ORNAMENTAL UNITS

Form 4



FORM A CASEING



STRAIGHT SERIES TYPE
(INTERIOR VIEW)



FORM B CASEING



FORM C CASEING



AUTO-TRANSFORMER TYPE
(INTERIOR VIEW)



FORM D CASEING

The No. 37 Diffusing Globe is used with the Form 4
see Page 59.

FORM 8 NOVALUX ORNAMENTAL UNITS

(With No. 39 Diffusing Globe and Form F Casing)

* Cat. No. (Unit Complete)	Fig.	LAMP RATING		Equipped with
		C-p.	Amp.	

STRAIGHT SERIES TYPE

176023	20	60	5.5	Series Film Cutout Type Socket
		80	6.6	
		100	7.5	
176024	20	250	5.5	Series Film Cutout Type Socket
		400	6.6	
		600	7.5	

1 IL SERIES TRANSFORMER TYPE

176025	20	400	15	Skeleton Multiple Socket
		600	20	
		1000	20	

STRAIGHT MULTIPLE TYPE

176026	20	200 watts	Skeleton Multiple Socket
176027	20	300	watts Skeleton Multiple Socket
		400	
		500	
176028	20	750	watts Skeleton Multiple Socket
		1000	

* Catalog numbers do not include MAZDA lamp or pole.

† For use with, but not including, a Type IL series transformer which should be mounted in the base of the pole, in a manhole or buried directly in the ground.

Approximate shipping weight of above units 44 lb.

FORM 9 NOVALUX ORNAMENTAL UNITS **(With No. 37 Diffusing Globe)**

FOR 400 c-p. MAZDA SERIES LAMPS

* Cat. No. (Unit Complete)	Fig.	Lamp Rating in Amp.	Equipped with
† SERIES AUTO-TRANSFORMER TYPE			
(Complete with Auto-Transformer for 6.6 Amp., 60 Cycle Series Cir			
176029	21	15	Form E Casing

† SERIES AUTO-TRANSFORMER TYPE			
(Complete with Auto-Transformer for 7.3 Amp., 60 Cycle Series Cir			
176030	21	15	Form E Casing

STRAIGHT SERIES TYPE

176031	21	{ 5.5, 6.6 or 7.5 }	Form E Casing
--------	----	------------------------	---------------

* Catalog numbers do not include MAZDA lamp or pole.

† Special auto-transformers can be furnished for any alternating series circuit from 3 to 10 amperes, 25 to 133 cycles.

Approximate shipping weight of above units with transformer 83 lb., without auto-transformer 78 lb.

FORM 9 NOVALUX ORNAMENTAL UNITS

(With No. 37 Diffusing Globe)

FOR 400 c-p MAZDA SERIES LAMPS

* Cat. No. (complete)	Fig.	Lamp Rating in Amp.	Equipped with
I SERIES AUTO-TRANSFORMER TYPE			
Complete with Auto-Transformer for 6.6 Amp., 60 Cycle Series Circuits			
FORM 1	1	6.6	Porcelain Casing
I SERIES AUTO-TRANSFORMER TYPE			
Complete with Auto-Transformer for 7.5 Amp., 60 Cycle Series Circuits			
FORM 14	14	7.5	Porcelain Casing
STRAIGHT SERIES TYPE			
FORM 1	2	5.5, 6.6 or 7.5	Iron Casing

* Catalog numbers do not include MAZDA lamp type.

† General auto-transformer type, 60 cycles, 400 alternating current, rated circuit from 3 to 10 amperes, 25 to 100 volts.

‡ The auto-transformer type is not provided for connecting 1000 c-p lamps.

Approximate shipping weight of above units with auto-transformer 85 lb., without auto-transformer 78 lb.

FORM 9 NOVALUX ORNAMENTAL UNITS

(With No. 37 Diffusing Globe)

FOR 1000 c-p. MAZDA SERIES LAMPS AND STRAIGHT MULTIPLE
TYPE FOR 100 TO 125 VOLT CIRCUITS

* Cat. No. (Unit Complete)	Fig.	Lamp Rating in Amp.	Equipped with
----------------------------------	------	---------------------------	---------------

For 1000 c-p. MAZDA Series Lamps

† SERIES AUTO-TRANSFORMER TYPE

(Complete with Auto-Transformer for 6.6 Amp., 60 Cycle Series Circuits)

176036	21	20	Form E Casing
--------	----	----	---------------

† SERIES AUTO-TRANSFORMER TYPE

(Complete with Auto-Transformer for 7.5 Amp., 60 Cycle Series Circuits)

176037	21	20	Form E Casing
--------	----	----	---------------

Straight Multiple Type for 100 to 125 Volt Circuits

176039	21	{ 400 500 }	Form E Casing
176040	21	{ 750 1000 }	Form E Casing

* Catalog numbers do not include MAZDA lamp or pole.

† Special auto-transformers can be furnished for any alternating current series circuit from 3 to 10 amperes, 25 to 133 cycles.

In the auto-transformer type a tap is provided for operation with a 600 c-p. lamp.

Approximate shipping weight of above units with auto-transformer 83 lb., without auto-transformer 78 lb.

FORM 4 NOVALUX ORNAMENTAL UNITS
(With Bell Insulator and No. 37 Diffusing Globe)
FOR 400 c-p. MAZDA SERIES LAMPS

* Cat. No. (Unit Complete)	Fig.	Lamp Rating in Amp.	Equipped with
----------------------------------	------	---------------------------	---------------

† SERIES AUTO-TRANSFORMER TYPE

(Complete with Auto-Transformer for 6.6 Amp., 60 Cycle Series Circuits)

176041	22	15	Form A Casing
176042	23	15	Form B Casing
176043	24	15	Form C Casing
176044	25	15	Form D Casing

† SERIES AUTO-TRANSFORMER TYPE

(Complete with Auto-Transformer for 7.5 Amp., 60 Cycle Series Circuits)

176045	22	15	Form A Casing
176046	23	15	Form B Casing
176047	24	15	Form C Casing
176048	25	15	Form D Casing

STRAIGHT SERIES TYPE

176049	22		Form A Casing
176050	23	5.5, 6.6 or 7.5	Form B Casing
176051	24		Form C Casing
176052	25		Form D Casing

* Catalog numbers do not include MAZDA lamp or pole.

† Special auto-transformers can be furnished for any alternating current series circuit from 3 to 10 amperes, 25 to 133 cycles.

Approximate shipping weight of above units with auto-transformer 130 lb., without auto-transformer 125 lb.

FORM 4 NOVALUX ORNAMENTAL UNITS
(With Bell Insulator and No. 37 Diffusing Globe)
FOR 600 c-p. MAZDA SERIES LAMPS

* Cat. No. (Unit Complete)	Fig.	Lamp Rating in Amp.	Equipped with
† SERIES AUTO-TRANSFORMER TYPE			
(Complete with Auto-Transformer for 6.6 Amp., 60 Cycle Series Circuit)			
176057	22	20	Form A Casing
176058	23	20	Form B Casing
176059	24	20	Form C Casing
176060	25	20	Form D Casing
† SERIES AUTO-TRANSFORMER TYPE			
(Complete with Auto-Transformer for 7.5 Amp., 60 Cycle Series Circuit)			
176061	22	20	Form A Casing
176062	23	20	Form B Casing
176063	24	20	Form C Casing
176064	25	20	Form D Casing
STRAIGHT SERIES TYPE			
176049	22	5.5, 6.6 or 7.5	Form A Casing
176050	23		Form B Casing
176051	24		Form C Casing
176052	25		Form D Casing

* Catalog numbers do not include MAZDA lamp or pole.

† Special auto-transformers can be furnished for any alternating current series circuit from 3 to 10 amperes 25 to 133 cycles.

In the auto-transformer type a tap is provided for operation on a 400 c-p. lamp.

Approximate shipping weight of above units with auto-transformer 130 lb., without auto-transformer 125 lb.

FORM 4 NOVALUX ORNAMENTAL UNITS
(With Bell Insulator and No. 37 Diffusing Globe)
FOR 1000 c-p. MAZDA SERIES LAMPS

* Cat. No (Unit Complete)	Fig.	Lamp Rating in Amp.	Equipped with
---------------------------------	------	---------------------------	---------------

† SERIES AUTO-TRANSFORMER TYPE

(Complete with Auto-Transformer for 5.5 Amp., 60 Cycle Series Circuits)

176069	22	20	Form A Casing
176070	23	20	Form B Casing
176071	24	20	Form C Casing
176072	25	20	Form D Casing

† SERIES AUTO-TRANSFORMER TYPE

(Complete with Auto-Transformer for 7.5 Amp., 60 Cycle Series Circuits)

176073	22	20	Form A Casing
176074	23	20	Form B Casing
176075	24	20	Form C Casing
176076	25	20	Form D Casing

Straight Multiple Type for 100 to 125 Volt Circuits

176081	22	400 and 500	Form A Casing
176082	23		Form B Casing
176083	24		Form C Casing
176084	25		Form D Casing
176085	22	750 and 1000	Form A Casing
176086	23		Form B Casing
176087	24		Form C Casing
176088	25		Form D Casing

* Catalog numbers do not include MAZDA lamp or pole.

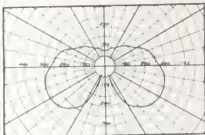
† Special auto-transformers can be furnished for any alternating current series circuit from 3 to 10 amperes 25 to 133 cycles.

In the auto-transformer type a tap is provided for operating a 600 c-p. lamp.

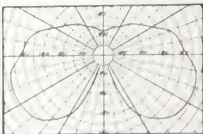
Approximate shipping weight of above units with auto-transformer 130 lb., without auto-transformer 125 lb.

NOVALUX ORNAMENTAL UNITS

Forms 8 and 9



ORNAMENTAL NOVALUX
CHARACTERISTIC DISTRIBUTION CURVE
WITH 250 C.P. MAZDA SERIES LAMP



ORNAMENTAL NOVALUX
CHARACTERISTIC DISTRIBUTION CURVE
WITH 400 C.P. MAZDA SERIES LAMP



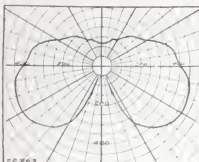
Fig. 30

FORM 8 UNIT
MOUNTED ON
ORNAMENTAL
POLE

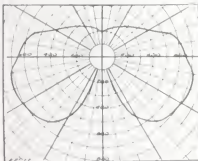
Fig. 31

FORM 9 UNIT
MOUNTED ON
ORNAMENTAL
POLE

NOVALUX ORNAMENTAL UNITS Form 4



ORNAMENTAL NOVALUX
CHARACTERISTIC DISTRIBUTION CURVE
WITH 600 C-P MAZDA SERIES LAMP



ORNAMENTAL NOVALUX
CHARACTERISTIC DISTRIBUTION CURVE
WITH 1000 C-P MAZDA SERIES LAMP



Fig. 12
UNIT WITH
FORM A CASING
MOUNTED ON
ORNAMENTAL
POLE

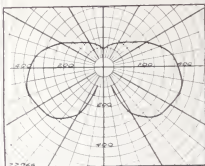
Fig. 13
UNIT WITH
FORM B CASING
MOUNTED ON
ORNAMENTAL
POLE

NOVALUX ORNAMENTAL UNITS

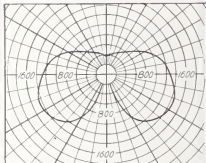
Form 4 (Cont'd)



Fig. 24
UNIT WITH
FORM C CASING
MOUNTED ON
ORNAMENTAL
POLE



ORNAMENTAL NOVALUX
CHARACTERISTIC DISTRIBUTION CURVE
WITH 400 WATT MAZDA MULTIPLE LAMP



ORNAMENTAL NOVALUX
CHARACTERISTIC DISTRIBUTION CURVE
WITH 1000 WATT MAZDA MULTIPLE LAMP



Fig. 25
UNIT WITH
FORM D C
MOUNTED ON
ORNAMENTAL
POLE

LIST OF POLE MANUFACTURERS WHO CAN SUPPLY
POLES FOR THE NOVALUX ORNAMENTAL UNITS

Electric Railway Equipment Co., Cincinnati, Ohio.

King Foundry Co., St. Joseph, Mo.

Lundin Elec. Machine Co., Boston, Mass.

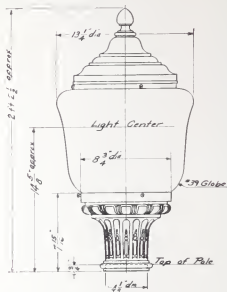
Mott, J. L., Iron Works, 5th Ave. & 17th St., New York
City

Ornamental Lighting Pole Co., 17 Battery Place, New
York City.

Union Metal Mfg. Co., Canton, Ohio

NOVALUX ORNAMENTAL UNITS

Dimensions



FORM 8 ORNAMENTAL NOVALUX WITH FORM F CASING



POLE-TOP DIMENSIONS

Dimensions are for reference only and are not to be used for construction.

NOVALUX ORNAMENTAL UNITS

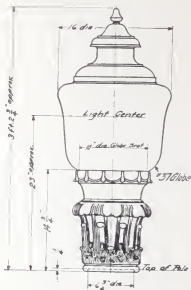
Dimensions



Dimensions are for reference only and are not to be used for construction

NOVALUX ORNAMENTAL UNITS

Dimensions



FORM 4 ORNAMENTAL NOVALUX WITH FORM A, B OR C CASING.



POLE-TOP DIMENSIONS

Dimensions are for reference only and are not to be used for construction.

NOVALUX ORNAMENTAL UNITS

Dimensions



FIG. 1. ORNAMENTAL UNIT, WITH 16\"/>

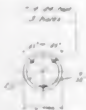


FIG. 2. ORNAMENTAL UNIT, WITH 16\"/>

Dimensions are for reference only and are not to be used for construction.





